INTEGRATING THEORY OF PLANNED BEHAVIOR AND EQUITY THEORY IN HOUSEHOLD GAS STOVES PURCHASING

Ling Boo Hiung

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ABSTRACT

For the purpose of this study, Theory of Planned Behavior by Ajzen and Equity Theory are being used as a theoretical framework. With such theoretical framework, it is aimed at conducting a research in examining household gas stoves purchasing behavior of consumers in Kuching. Data are collected through self-administered questionnaires among gas stove buyers. With 310 valid responses, regression analysis is used to identify the factors affecting household gas stoves purchasing behavior of consumers in Kuching. The regression analysis results indicated that all factors have positive and significant influences on household gas stoves purchasing intention. The questionnaire sample size is considered relatively small. This study can be strengthened by increasing the sample size. Besides, the study will carry more weight and relevance if a nationwide survey is conducted. This study found that, in the pre-purchase stage, attitude (71.2%), subjective norms (20.5%) and perceived behavior control (13.0%) are positively significant towards the gas stove purchase intention. In the post-purchase stage, customer satisfaction is found to be highly correlated to word of mouth (83.5%) and repurchase intention (56.0%). The findings of this study will contribute to and extends our understanding of the household gas stoves purchasing behavior, identifying the rationales for purchasing of household gas stoves. From a managerial viewpoint, the findings provide support for investment decisions on household gas stoves business.
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Chapter 1 Introduction

This study is focused on the consumers buying behavior towards household gas stoves. In an attempt to illuminate the essence of consumer behavior in this study, the commonly used Theory of Planned Behavior (TPB) from the Ajzen (1991) is being investigated. The elements absorbed from this theory include attitude towards behavior, subjective norm and perceived behavioral control. These elements will lead to the intention and buying behavior. Thereafter, this study further extends by using the Equity Theory where another three constructs; satisfaction, word of mouth and repurchase intention are being examined. The findings would define whether the consumer is generally influenced by intrinsic or extrinsic factors when making the intention.

The intention of this study is not only to review and identify the findings, but it also evaluates the studies and theories under examination which aims at providing a better understanding of researches conducted in the field.

Therefore, the significance of this study is to find out the constructs affecting customers when buying gas stove for household use. These findings can also help the gas stove manufacturers, importers and retailers to formulate and design marketing strategies to achieve the maximum product sales and market share.

The remaining of this chapter is organized as followed: research background, problem statement, objectives, theoretical background, research question, definition of terms, significant of study, scope of the study and concluding research.
1.1 Research Background

A stove is a heat-producing device used for heating or for cooking food. Typically the word is used to refer to a kitchen appliance used for either generating warmth or for cooking. Stoves are basically used in home kitchens, hotels, restaurants and for outdoor cooking. In current scenario like all the other modern kitchen appliances stove also plays a role in maintaining the overall uniqueness of the kitchen.

Gas stove or gas cooker is one of the most popular cooking appliances. It is found in almost every kitchen of residential houses. Gas stove runs over certain types of gases. These gases range from propone and butane to liquefied petroleum gas (LPG).

The gas-burning stove has long been one of the cooking methods of those in the world. There have been some dramatic changes in the styles and mechanics of the stove over time. The gas stove was not the first that was ever created. Before the gas stove, there were German-designed, five-plate, or Jamb, stoves in the 1720s. Following that German design, Benjamin Franklin invented the "Franklin Stove," or the iron furnace stove. Later came the first soot less stove, a kerosene version designed by Frans Wilhelm Lindqvist. The coal stove arrived on the scene in 1833, invented by Jordan Mott. The baseburner, as it was called, used ventilation to burn coal efficiently. In 1826, however, a full seven years earlier, the British inventor, James Sharp, created the gas-burning stove, but these remained isolated experiments. James Sharp patented a gas stove in Northampton, England in 1826 and opened a gas stove factory in 1836. At the World Fair in London in 1851, a gas stove was shown, but only in the 1880s did this technology start to become a commercial success.
Early gas-burning stoves did not have a pilot light, and therefore, had to be lit with a match. If the door was closed and the gas was left on, the gas could fill the oven chamber and spread throughout the room. A simple electrical arc, or the lighting of a pipe, could ignite the gas in the room, triggering an explosion. Gas stove manufacturers later installed a safety valve in the stove to prevent these unfortunate accidents. These safety valves remain in gas-burning stoves even today. An added safety feature is the electrical ignition of the pilot light—the click you hear just before the flames appear.

The turn of the 20th century found many women still using coal-burning stoves—starting fires each morning, constantly tending the fires, emptying ashes and applying waxy black polish to keep the stoves from rusting. All of this took an hour or more, and no cooking was involved yet. Gas-burning stoves took a much smaller amount of work to maintain and could therefore reduce a woman’s time in the kitchen. Although gas companies already marketed piped gas for the illumination of cities and homes, it was decided that if the gas-burning stove was here to stay, then the gas companies must expand their product lines, thereby providing the needed gas for stoves, by piping the gas into individual homes.

Perhaps the most outstanding feature of a gas-burning stove is that its surface remains largely cool when cooking. Instead of being forced to choose a coal-burning stove that could produce potential burns, customers could choose the smaller gas-burning variety. In 1915, a major development for the gas-burning stoves was introduced—a thermostat for the oven. In addition, about the same time, natural gas was introduced for use in gas-burning stoves. This natural gas proved to be cheaper and less toxic for
those around. Gas-burning stoves outnumbered coal or wood-burning stoves two to one by 1930.

Some gas stoves today come equipped with gas burners and an electric oven. Having gas burners allows a cook to have total control over the heat that is applied to food. Gas ovens do not heat as evenly as electric ovens, but they prevent the drying out of cakes and brownies more efficiently. Overall, gas-burning stoves are about equal to other types of stoves on the market.

Numerous studies have been conducted on the preference and attributes of induction and gas stoves (Vani et al., 2011; Qin et al., 2011; Ho et al., 2011), yet little study has been conducted on the purchase behaviour for gas stove. Therefore, this study hopes to fill in the knowledge gap by understanding the consumers’ behavior in purchasing gas stove using the Theory of Planned Behavior and Equity Theory.

1.2 Problem Statement

Due to the increasing demand for household gas stoves in the country and world’s market, many consumers are feeling doubtful and unconfident that the household gas stoves that are sold to the market might encourage some local and foreign manufacturers to think about venturing into household gas stoves production industry. Much of the research reports on household gas stoves markets are prediction on preference compared to induction cooker, but there is dearth of theory-driven research on household gas stoves purchasing. In general terms, theory-driven research facilitates a better understanding of the attitudinal and behavioral factors that influence a particular behavior, allows researchers to propose and test causal models
of the behavior, and ultimately facilitates effective design and implementation of programs that aim to promote the behavior. Thus, a further purpose of this study was to apply the Theory of Planned Behavior (TPB) and Equity Theory to the study of household gas stoves purchasing of consumers in Kuching. Looking at the current scenario, the purpose of this study is to examine the major determinants of household gas stoves purchasing intention in Kuching. In this present business scenario in Malaysia, this study seeks to examine the consumers’ gas stoves purchasing behavior, as well.

1.3 **Purpose, Objectives and Research Questions**

The purpose of this study is to apply the Theory of Planned Behavior (TPB) and the Equity Theory to the study of gas stove purchasing among consumers in Kuching city. The objectives of this study are:

1. To identify the relationship between attitude and purchase intention
2. To identify the relationship between subjective norms and purchase intention
3. To identify the relationship between perceived behaviour control and purchase intention
4. To identify the relationship between purchase intention and customer satisfaction
5. To identify the relationship between customer satisfaction and word of mouth
6. To identify the relationship between customer satisfaction and repurchase intention
Based on the objectives, the following research questions are formulated:

RQ1. What are the factors that determine the likelihood of purchasing gas stoves by consumers in Kuching?

RQ2. How much does the purchase intention affect the customer satisfaction?

RQ3. Does the customer satisfaction lead to customer retention by word of mouth or repurchase intention?

The research questions are concerned with understanding the factors that encourage household gas stoves purchasing intention. Purchasing behaviour depends on specific social, cultural and economic which may differ significantly between households and even regional areas that limit the generalization of research results from one country’s to another country’s contexts. This justifies an empirical investigation of consumers’ awareness, perception, and their readiness or concerns about their current and potential purchasing behaviour to uncover the factors that encourage or deter household gas stoves purchasing. Moreover, this will contribute to confirm past findings of limited research attempts in possible generalization on household gas stoves purchasing in Malaysia. The main objective of this study is to examine the antecedents of household gas stoves purchasing intention using the Theory of Planned Behaviour (Ajzen, 1985, 1991) and further extended to examine three other constructs based on the Equity Theory on household gas stove purchase.

1.4 Scope of Study

In this study, Kuching, the capital city of Sarawak is taken as the research scope. This is due to the fact that Kuching has the most households and population as compared to other cities or towns like Sri Aman, Sibu, Bintulu or Miri and some others. Hence, it
can foresee that large potential market and customers are available for household gas stoves in Kuching.

Secondly, since the time to carry out this research and the data accessible by the researcher are limited for this study, hence this study is focused only on the Kuching’s gas stove consumers. The respondents are mostly from the medium and upper middle class because the customer data was taken from a gas stoves retail company whom collected the customer data during the Perfect Living Exhibition in Borneo Convention Center Kuching, where most of the visitors came to know of the Fair through newspaper and electronic social media.

A total of 310 respondents from Kuching city are taken as samples. These respondents are chosen using random sampling. The data is acquired by questionnaire which is divided into sections. Detail discussion can be found in Chapter 3, Research Methodology.

1.5 Research Methodology

This study applied the quantitative method using questionnaire survey to solicit information from the consumers. The questionnaire is designed based on TPB and Equity theory where the constructs and items are adopted from validated instruments. Having collected the data, descriptive analysis and regression analysis are carried out to analyse the results. The findings are then interpreted and reported to achieve the objective of the study.
1.6 Definition of Constructs

For the better understanding of this study, the constructs used in this study are defined as below:

1.6.1 Purchasing Behavior

Purchasing behavior refers to a person’s choice or decision in choosing, purchasing, possessing and utilising a goods or service in order to fulfil and meet his or her satisfaction when he or she opt for that particular goods or service. In another words, purchasing behavior can be defined as choice, buy and consumption of goods and services for the satisfaction of consumer’s wants (Shah, 2010).

1.6.2 Attitude

Attitude is a psychology tendency that is shown in the evaluation of a particular entity with some degree of favour and disfavour (Eagly & Chaike 1993). It is an important psychological construct because attitude can predict many behaviors (Kraus, 1995). Hence, the more favourable an individual’s attitude towards a particular behavior, the stronger will be an individual’s intention to perform that behavior (Ajzen, 1987). In this study, attitude is the target behavior towards purchasing a gas stove.

1.6.3 Subjective Norms

Ajzen (1991) defines subjective norm as the perceived social pressure to perform or not perform the behavior by an individual. Lim and Dubinsky (2005) state that subjective norm is a function of the way a customer’s referent other, such as family members’ and friends’ view on a product and the degree of motivation of the customer to agree with those beliefs and the person’s motivation. In this study,
subjective norm refers to consumer perception about gas stove by the advice or motivation of the referent group such as family members and friends.

1.6.4 Perceived Behavioural Control

Ajzen (1991) defines perceived behavioral control as the perceived ease or difficulty of performing the behaviour. From the prospective of product purchasing, perceived behavioral control explains consumer views of the availability of knowledge, resources and opportunities necessary for purchasing a product. In this study, perceived behaviour control refers to the customer’s self-confidence in his or her capability to use the gas stove.

1.6.5 Purchase Intention

Purchase intention is referred to the probability and willingness to buy (Burton, Lichtenstein, Netemeyer, & Garreston, 1998; Song et al., 2005). However, Black, Miniard and Engel (2001) claim that purchase intention can be represented by what the consumers think that they will buy. In this study, purchase intention is referred to the subjective probability dimension that connects a customer in purchasing a gas stove.

1.6.6 Satisfaction

Customer satisfaction is one of the crucial elements of business strategy and aim for all business activities to survive and create a competitive market (Lovelock & Wirtz, 2007, Anderson, Fornell, & Lehman, 1994; Grontoos, 1994). Gyasi and Azumah (2009) describe satisfaction as the process of customer overall personal judgement on a product or service performance against his or her expectation or desires over a
period of time. In this study, satisfaction is referred to the emotional or cognitive response of the respondent after purchased a gas stove or used a gas stove for a certain period of time.

1.6.7 **Words of Mouth**

Words of mouth is defined as any positive communication about a company’s product or service (Freiden and Goldsmith, 1988; Henning-Thurau, Gwinner, and Gremler, 2002; Harrison-Walker, 2001). Words of mouth is further described as a communication tools that can provide free information with commercial value to the customer and at no cost incurrence to the company (Braga, Nascimento, & Pereira, 2011). In this study, word of mouth is referred to recommendation given by a satisfied customer to another potential customer after purchased a gas stove or used a gas stove for a certain period of time.

1.6.8 **Repurchase Intention**

Helier, Geursen, Carr and Richard (2003) define repurchase intention as the individual’s judgement along buying again a designated product or service from the same company, taking into consideration his or her current situation and likely circumstances. Spreng et al. (1995) further mentions that the cost to retain an existing customer is lesser than to prospect for a new customer, therefore repurchase intention is a very important construct to be considered. In this study, repurchase intention is referred to the customer willingness to buy gas stove again in future once the need or desire arise.
1.7 Outline of Thesis Structure

This thesis is divided into 5 chapters, consisting of:

Chapter 1 Introduction

This chapter gives an overview of the study and the problem of the existing literatures. The problem statement given then lead to the research purpose and objective. A brief research method is also stated to understand how the research is going to be carried out. This chapter ends with the outline of the whole thesis.

Chapter 2 Literature Review

This chapter provides the historical background of the gas stoves. Later, previous studies conducted in the field of cooking stove are written to form the knowledge gap. Literature on the theory used in this study is also explained to set the fundamentals to the questionnaire design. The constructs and items are extracted from the literatures to form the questions in the survey. Following that, the theoretical framework of this study with the hypotheses is delineated accordingly.

Chapter 3 Research Methodology

This chapter is a vital part of this thesis where it sets the procedures taken to conduct the research with validity and reliability. Without a proper methodology, the findings are deemed unreliable and invalid. In this chapter, the research method, research strategy, research approach and tool, sampling and questionnaire design are addressed. Later, the analysis method adopted is explained with the hypotheses involved.
Chapter 4  Data Analysis and Discussion

In this chapter, the findings of this research will be presented in tables and charts. There are also findings represented in percentage form for better and clearer indication. The demographic profile of the respondents is presented. This chapter then analyse and interpret the data collected in two portions: descriptive statistic and regression analysis. The chapter includes the discussion on the findings as well.

Chapter 5  Conclusion

This chapter concludes the study with a summary of the findings. It also sums up on how the objective of this study is achieved. The direction for further study is also proposed.

1.8  Chapter Summary

In this Chapter 1, an introduction about this study which includes the research background, history and development of gas stove is discussed. Furthermore, this chapter also discussed about the problem statement, objective of the study, scope of the study and research methodology, definition of terms for further discussion on the constructs used in this study. This chapter concludes with an overview on the outline of the thesis structure.
Chapter 2  Literature Review

This chapter provides the historical background and market review of the gas stoves. Later, previous studies conducted in the field of gas stove are written to form the knowledge gap. Literature on the theory used in this study is also explained to set the fundamentals to the questionnaire design. The constructs and items are extracted from the literatures to form the questions in the survey. Following that, the theoretical framework of this study with the hypotheses is delineated accordingly.

2.1  Historical Background and Market Review

Men cannot live without food. Cooking is a part of the important process to produce food. Thus, gas stoves are used in house kitchens, restaurants and also outdoor cooking. In daily life, gas stoves have been a major part of residential and commercial in maintaining the overall uniqueness of the kitchens.

The first gas stove was invented in the 1820s and commercialise in the 1880s (Bellis, n.d.). The evolution of gas stove is still going strong to produce better stove for cooking (Foundations, 2012).

The gas stove technology is actually quite simple. The natural gas hose that supplies gas is connected to the gas stove. The natural gas is then released to combine and mix with the air when the switch is turned on. Eventually, sparks produce from the stovetop will ignite the mixture (Bellis, n.d.).

Certainly cooking range is a big investment that is intended to last for several years to come. World Energy Outlook 2006 reports that the number of people relying on

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biomass will increase to over 2.6 billion by 2015 and to 2.7 billion by 2030. This is due to population growth. Thus, about 33% of the world population depends on these fuels.

Based on World Energy Outlook 2006, 560 million households still depend on traditional biomass for cooking. It states that hundreds of millions of improved stoves have been distributed worldwide since 1980s. There are about 185 million gas stove users in China, 34 million in India (Sinton, et al., 2004) and 5 million in Africa (Renewables 2005 Global Status Report, 2005).

Subsequently, many companies are paying much attention to developing better gas stoves especially the modern energy saving and environmental protection gas stoves (Vatti, n.d.). Due to traditional Chinese cooking habits that prefer fire frying, Vatti (n.d.) points out that there is a stable growth for gas stove in China market from the year 2007 to year 2009. China is also one of the biggest gas stove exporters. Many Chinese gas stove brand exports mainly to West Asia, Southeast Asia, Europe and North America and other regions (Vatti, n.d.).

Malaysian’s traditional cooking habits prefer fire frying too. Most of the households in Malaysia are using gas stoves. Since year 1997 until 2011, there is a continuous increase of demand for liquefied natural gas (LNG) (Figure 2.1). Petronas Gas, one of the Malaysia’s supplier for natural gas is expected to increase natural gas supply from 382 million standard cu ft per day (mmscfd) to 442mmscfd in 2013 and 492mmscfd by 2015 (Edge, 2012).